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N° VI.

TEST FOR ACIDS, ALKALIES, AND COMPOUND SALTS.

The THANKS *of the Society were this Session given to Mr.* THOMAS GRIFFITHS, *of Church-street, Kensington, for his Communication* ON THE USE OF THE COLOURING MATTER OF RED CABBAGE AS A TEST FOR ACIDS, ALKALIES, AND COMPOUND SALTS. *A Specimen of the Test-paper prepared by him is placed in the Repository of the Society.*

SIR; 9, Church-street, Kensington.

I REQUEST you will lay before the Society of Arts, &c. the inclosed specimen of test-paper, made from the infusion of red cabbage, which paper is a test of the presence both of acids and alkalies; the former changing its blue colour red, the latter changing it green.

The application of this paper to the purpose of the experimental chemist I believe will be found to possess a claim to originality. It is thus prepared:—Take one pound of the minced leaves of the red cabbage, and boil the same with a pint of distilled water, till all the blue colour is extracted. The liquor is then to be strained through a cloth or sieve; and the clear infusion, which is of a fine blue colour, is to be evaporated to half its bulk, and poured into a shallow dish: the paper may then be dipped into it, and hung on lines to dry.

A sheet of the filtering paper, which is the paper used, absorbs two fluid ounces of the infusion.

Metallic and other salts which, although they be neutral, give indications of alkali with turmeric paper, do not affect this paper as alkalies, but give indications of neutral or acid salts, as may be the case.

The paper is reddened by the following acids:—Acetic, arsenic, boracic, camphoric, carbonic, citric, malic, muriatic, nitric, oxalic, phosphoric, prussic, pyroligneous, sulphuric, sulphurous, tartaric, and all the acids that I have tried.

It is turned green by the following alkaline substances:—Potash, soda, lime, baryta, strontia, magnesia, ammonia, carb. ammonia, carb. potash, carb. soda, borax.

The following substances give alkaline indications with turmeric paper, not being so:—Permuriate iron, protomuriate iron, pernitrate of iron, protonitrate iron, protosulphate iron, persulphate iron, sulphate zinc, muriate of tin, muriate ot zinc, boracic acid.

Corrosive sublimate reddens this paper as also that from litmus.

Acetate of lead turns this paper green as an alkali does, but there is no test paper with which it does not give indications of alkali.

In alkalimetry *two* test papers are employed, litmus and turmeric, and two drops have to be taken repeatedly from the solution in order to try if it is acid or alkaline, and by taking away so many drops the result of the process is rendered fallacious.

With my test-paper one drop of the solution only is required, as it is a test both for acid and alkali. In many other processes of analysis a test for acid and alkali at one operation may probably be found advantageous.

THOMAS GRIFFITHS.